REMARKS

Claims 1-20 are pending. Independent claims 1, 2, and 13 have been amended.

The continued allowance of claims 3-5 and 14-16 is acknowledged with appreciation.

Applicants' claims 1, 2, and 13 have been amended to recite that the determination of whether diversity is appropriate is based on demodulated processed radio frequency signals. This is supported at several places in the application, including for example p. 8, l. 14 - p. 9, l. 23, and FIGs. 4 and 5.

Claims 1, 2, 6-13, and 17-20 stand rejected over a combination of Applicants' FIG. 3 and Japanese Published Patent Application No. JP 7-15380 assigned to Kokusai Denki kk ("Kokusai"). These rejections are moot in view of the amendments to claims 1, 2, and 13, which now clearly distinguish over the cited information.

As in previous Actions, the pending Action admits that FIG. 3 fails to disclose selectively activating and deactivating the second RF processor based on whether diversity is appropriate. The pending Action tries to remedy this deficiency with Kokusai.

Kokusai discloses only an envelope fading detector as the basis for turning on or off a second receiver, and thus is essentially the same as the arrangement depicted by Applicants' FIG. 2, which is described beginning at page 3 of this application. Kokusai's title states that it "uses [a] fading judgement circuit to put [a] second signal detector into power saving . . . mode". In addition, the basic-abstract states that "the detector (4) has a power saving mode that is switched on in response to the diversity control circuit (7). The selection circuit is controlled by the fading of the detector output. The first detector detects the envelope intensity of the first received signal and produces a signal which is passed to a fading pitch judgement circuit (6)."

Kokusai's fading measurement is done on the "envelope intensity", i.e., the raw radio signals. This is quite different from the subject matter of Applicants' amended claims, which use the demodulated signal to make the diversity decision. In particular, several properties for making the decision (e.g., bit error rate, frame error rate, likelihood comparison techniques, signal quality of demodulated signal)

are defined by the dependent claims. All of these would have been far from obvious modifications of a disclosure based on only fading properties as in Kokusai at least because a decision based merely on a raw RF signal envelope is likely to be very different from a decision based on a demodulated signal.

The reason is that there is not at all a one-to-one relation between fading and quality of the demodulated signal. In many cases, the quality of the demodulated signal may drop due to interference that is not seen when just measuring fading. In such cases it may be very beneficial to use two receivers and smart processing of the two demodulated signals. For example, bit error and frame error rates can increase due to interference, but the interference will not affect fading at all. By using two received signals and doing smart combinations of them, the interference can be cancelled, thus improving the bit and frame error rates substantially.

Basing a determination on fading as in Kokusai recognizes that a fade can cause the signal strength in one antenna to drop below the point where sensible reception can be done. Using diversity (the second receiver) improves the chances of having sufficient signal strength since the likelihood of a fade's making the signal strength drop simultaneously at the two antennas is fairly low.

Instead of this, Applicants' monitoring of the quality of the demodulated signal handles the situation when signal strength drops (as in a fade) and also handles cases in which the quality drops due to interfering signals. These cases cannot be handled by Kokusai. In the case of interfering signals, the diversity (the second receiver) is used not to ensure signal strength but rather to get access to a second version of the received signal in which the interference has different properties. This can then be exploited to effectively cancel the interference.

In many real situations, field strength does not indicate the relative quality or usefulness of an antenna signal. In CDMA systems, many users share the same carrier and are separated only by which spreading codes they use. In such systems, the field strength tells only the strength of the combined signal of all users on the same carrier, and this may have little to do with the quality of a particular user signal of interest. The two antenna signals must be demodulated and processed at base band to determine the relative quality they have.

With respect to the rejected dependent claims, the Action asserts that using quality measures other than field strength would have been obvious modifications to

FIG. 3 and Kokusai. Applicants' continue to respectfully disagree for reasons set forth in the response to the previous Action. Kokusai's disclosing the use of "envelope intensity" would not have suggested the use of bit error rate, frame error rate, or other techniques recited in the dependent claims.

In view of the foregoing, it is believed the amended independent claims and their dependent claims distinguish over the cited art. It is further believed that the application is in condition for allowance. An early Notice of same is respectfully solicited. If any questions remain, the Examiner is invited to telephone the undersigned attorney at the number given below.

Respectfully submitted,

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